CHANGES IN THE CHARACTER OF DISEASES

WE have for long been dimly conscious that acute diseases, more especially those of an infectious origin, vary from time to time in the degree of their incidence and intensity. Some, like the "sweating sickness" of the Middle Ages and the chlorosis of the nineteenth century, seem to have died out; on the other hand, some new diseases appeared during the War, the result of new environment, such as "trench foot," "trench fever," and "shell shock." Plague, typhus, typhoid, diphtheria, and small-pox are much more restricted in their activities than they used to be; florid gout and aortic aneurysm are now not often seen; on the other hand, acute poliomyelitis, influenza, undulant fever, tularæmia, and relapsing fever appear to be gaining ground, and cancer, especially of the lung, is more common, at least on this continent. But, besides this, there is reason for thinking that certain of the infectious diseases may change their type. Some epidemics of influenza and typhoid fever are more serious in their effects than are others; scarlet fever is less virulent than it used to be; small-pox, in England and Canada, at least, is at present relatively mild, so much so that it goes under other names, such as alastrim, para-small-pox, variola minor, and varioloid; typhus is met with in the United States in an attenuated form as Brill's disease; we now rarely see the terrible bone lesions of syphilis, except in museums. Acute rheumatic fever and pneumonia also show at the present time deviations from their clinical pictures as drawn in text-books. Other examples might be given. Of course many of the diseases just mentioned are or can be brought under control by certain measures, such as improved sanitation, better hygiene, vaccination and inoculation, and their extent and distribution in the world are therefore largely conditioned by the degree of intelligence and the advancement in civilization of the communities concerned. In spite of such precautions, however, infectious diseases may spread or be introduced into new fields owing to the greater amount of travel at the present day, the increased speed of communication, and the concentration of large numbers of people in cities. And where infectious diseases are introduced into virgin territory they are apt to assume a malignant character.

Apart from all this, moreover, there is reason for thinking that climatic and seasonal influences play a part in the incidence of disease. Rheumatic fever and chorea are more common in March and April than at other times, poliomyelitis is most often met with in summer, and pneumonia tends to prevail in spring and autumn, at the turn of the seasons. We do not at the present time go so far as our ancestors when they attributed disease to the influence of the heavenly bodies, but in the light of the new discoveries in physics who can predict what we shall believe in the future?

Sydenham, as is well known, had some inkling of all this. He believed that acute diseases manifested seasonal variations, dependent on meteorological conditions, with waves measured in months, and that, accordingly, their response to treatment differed over a short period. Influenza would seem to illustrate this law. He also spoke of an "epidemic constitution," apparently meaning by this that special influences, telluric or cosmic, impress some special feature on the clinical course of disease so that it becomes dominant and excludes other types; in this case the wave of variation is measured in years. Thirdly, he recognized that diseases might manifest a rise, a fastigium, and a fall, the whole cycle extending over centuries.

Such views, however, have not always been accepted. On this point, Sir Humphry Rolleston* cites J. Hughes Bennett (in 1857) and Markham (in 1864), who denied that after the cholera epidemic of 1832 the type of fevers previously sthenic became asthenic, and Murchison (in 1873), who wrote that each of the specific fevers had maintained its identity in all ages and countries, and that the supposed change in type was not a fact, this idea arising from the confusion of the disease that was thought to have altered with some other that had come on the scene—in other words that there was an error in diagnosis. As an example Murchison

* I. Rolleston, *Brit. M. J.*, 1933, **1**: 499.

instanced the confusion that existed between typhus, a killing disease, and relapsing fever, which seldom killed. While he does not doubt that a change of character has taken place in the case of some acute diseases, Sir Humphry agrees that "the argument that improved diagnosis must be taken into account before accepting a supposed change in type of disease must be allowed due weight." He adds a modern instance.—"Coronary thrombosis has only been generally recognized and found to be extremely common since about 1926, and in the future it might therefore be thought that angina pectoris had changed its type; but is it not that differential diagnosis has altered the label?" Care must therefore be exercised before we become dogmatic.

The idea that diseases may change their character is not far-fetched when we realize how many variables are concerned in their onset and development. Diseases are not rigid entities but the outcome of the play of opposing forces—the resistance or susceptibility of the body, on the one hand, to some extent a matter of hereditary constitution and sometimes of acquirement, and, on the other, numerous factors that are to be classed under the head of environment. Environment is of two kinds, internal (*milieu intérieure* of Claude Bernard and "homœostasis" of Cannon) and external. Internal environment includes such things as constitution, the make-up of the body, and the metabolic processes, which last may also be the outcome of inheritance or intrauterine acquirement; external environment includes microorganisms, toxins, trauma, food, unhygienic conditions of life, fatigue, unhealthy occupations, climate, locality, altitude, and so on. In the case of infectious diseases we have to reckon with the "seed" and the "soil," the dosage and the line of attack. Not only is the invasion of the body by microorganisms conditioned by these and other factors but these govern the reaction of the body; hence alterations in the effects produced, for example, variations in the degree of virulence that are manifested at different times. Much of this may be regarded as academic and philosophical, but the broad generalization remains that diseases do sometimes change their character. When a sufficient mass of reliable statistics shall have accumulated no doubt the "why" and the "how" will be settled more definitely and beyond the shadow of a question.

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Editorial Comments

The Cost of Medical Care

The leading editorial in the *British Medical Journal* of March 18, 1933, deals with the majority and minority reports growing out of the five year study engaged in by a representative committee of forty-six persons studying the costs of medical care in the United States. Bearing in mind that the British Medical Association has, for twenty years, been intimately associated with a national health insurance scheme, the remarks of the Editor should be viewed with more than passing interest. Quoting from the editorial, we find the following:—

"It is very difficult to give, or, at all events, to be sure that one is giving, a correct picture of the situation disclosed by this mass of material, or of the proposals that are made to deal with it. Viewed from our side of the Atlantic, the statements made, both in the report itself and by those who have expounded or commented upon it, are somewhat bewildering. . . .

"Any criticism from outside the United States must, of course, be offered with diffidence and reserve, but, judging from conditions and experience in Great Britain, the report would appear to exhibit an absence of clear thinking and a quite unnecessary timidity; and the attitude of some of those who support the minority report as against that of the majority, especially as represented by a lucubration in the *Journal of the American Medical Association* of December 3, 1932, seems to be unwarrantably antagonistic and unhelpful. Wherein, then, may wisdom lie, if facts from this side are applicable at all? It can scarcely be doubted that, in America as here, some communal concern and provision for the health needs of those who cannot supply them for themselves is not only legitimate but necessary; and surely it is not the medical profession alone that is concerned in such provision and in its administration. Such provision for all can be made only by a free service paid for wholly by taxation or by some form of compulsory insurance. Twenty years' experience of the latter method (imperfect and incomplete though it be) in this country, has shown that it does not necessarily carry with it, as the minority report alleges, 'solicitation of patients, destructive competition among professional groups, inferior medical service, loss of personal relationship of patient and physician, and demoralization of the profession.' It is true that the proposals of the majority may involve some danger of the first two of these evils; therein they are inferior to the system of national health insurance as known here. It is true, also, that in any scheme there are certain essential provisos, but on most of these the majority and minority of the committee are united. The provisos are: